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ABSTRACT

Based on the hypothesis that certain elementary texts generally assign negative unrealistic, and tertiary roles to technical-vocational work modes, the study indicated that quantitative and qualitative bias in favor of professional work modes does exist in elementary reading textbooks. Jobs occupying positions of less status, i.e., technical-vocational and unskilled, are mentioned (1) less frequently, (2) less realistically, (3) less positively, and (4) less emphatically than professional and paraprofessional work modes. When the comparisons were made by publisher and grade level, it was discovered that the same kind of bias existed in some grade levels and with some publishers. Each textbook was analyzed in terms of (1) quantitative bias--frequency of reference made to each work mode--and (2) qualitative bias--a contextual evaluation of each reference to a work mode. The basic instrument employed in the study was the Hollingshead "Two Factor Index of Social Position," employing seven different groupings of occupations in a continuum of low-to-high status. The analytical methodologies employed in this study were chi-square, goodness of fit, and contingency analysis. The body of the text is made up of tables substantiating the research findings. (MW)

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elementary basal readers and work mode bias

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ELEMENTARY BASAL READERS AND WORK MODE BIAS

A plethora of studies has been conducted concerning textbook content and bias.[1] But one aspect of textbook analysis which has received *no* consideration concerns the possible differential treatment of work modes. While it is true that many factors influence occupational choice, if textbooks exert any significant influence on the vocational choice of children, there exists a need for a detailed analysis of possible textbook bias toward various work modes.

According to Dr. Sidney P. Marland, Jr., United States Commissioner of Education, the majority of students in public schools are enrolled in college preparatory programs. Out of this group, however, only 20 per cent will actually complete a four-year college or university program. In a speech before the National Association of Secondary School Principals, Dr. Marland expressed his concern when he asked,

> Shall we persevere in the traditional practices that are obviously not properly equipping fully half or more of our young people, or will we immediately undertake the reformation of our entire secondary education in order to position it properly for maximum contribution to individual and national life?[2]

In a recent interview, Dr. Marland reiterated this concern by indicating that

> Based upon Bureau of Labor statistics, eighty per cent of the jobs in this country can be performed by people with a high school diploma.[3]

Larry J. Bailey further reinforced Dr. Marland's position when he noted that

> Growing unemployment among better educated segments of American society and the cry of many young people for education that has personal relevance are causing many people to re-examine the role of education and the universal worth of a college degree. Youth, now, more than ever are asking themselves, "What shall I do with myself?"[4]

Indication of the depth of the problem is the fact that Herbert S. Parnes collected data showing that public school teachers and their pupils have inaccurate perceptions of income determinants and of present and future job markets; they also have negative attitudes toward vocational-technical job activities. These inaccurate perceptions contrast with the following existing facts: (1) In a market system, income and productivity are inextricably related; (2) changes in the job market "mix" are accelerating at geometric rates; (3) unskilled jobs are disappearing at exponential rates; (4) the majority of students currently enrolled in public schools ultimately will find jobs which are classified as technical- vocational.[5] It is obvious that public school teachers and, in turn, their pupils are not fully cognizant of the labor situation. Textbook authors must assume at least partial responsibility for this lack of awareness.

The Wall Street Journal recently surveyed the problem of the unusually high unemployment level among college-trained people. The *Journal* reported that the 705,000 college graduates who entered the labor forces in the summer of 1971 represented a 12.8 per cent rise from the summer of 1970. At the same time, hiring by employers fell more than 25 per cent. Margaret S. Gordon, economist and Associate Director of the Carnegie Commission on Higher Education, predicted that

> In general, college graduates are going to have to settle for jobs that are less desirable and farther down the occupational ladder than the ones they took in the 1960's. John D. Singleton, director of placement at Michigan State University, states that, "We simply have an overabundance of college graduates in relation to society's needs.[6]

The oversupply of professional personnel also extends to teaching. *The Wall Street Journal* estimated that 37 per cent of all college graduates last year were certified to teach. According to the article, the National Education Association estimates that 234,000 new graduates this year will compete for only 115,900 jobs in the nation's public schools.[7]

Richard B. Freeman, in a summary of changes in the school-age population from 1950 to 1956, reported (1) that 55 per cent of the age group 18-21 years old is now enrolled in degree programs as compared to 34 per cent in 1950, (2) that there has been a general shift from professional to academic fields, and (3) that there has been a general expansion

of graduate education. Freeman also indicates that these trends have continued through the period 1965 to 1970.[8]

From the data cited above, it would seem that current society cannot provide the professional and paraprofessional levels of employment equal to the supply which is being created. It is in this context, then, that this study finds its significance. If textbooks exert significant, consistent, and pervasive influence on youth, then the comprehensive evaluation of possible bias in favor of professional work modes should provide help in providing an educational process which is consistent with authentic work opportunities.

While the literature on textbook bias has not treated the problem of work mode bias, it clearly documents pervasive racial, ethnic, and social class bias which buttresses an a priori assumption of bias in favor of professional-paraprofessional work modes.

For example, in 1967, the Conference Resolutions Committee of the Fourth National NEA Commission of Professional Rights and Responsibilities urged all educators to concern themselves and their schools with their responsibility in promoting better human relations, understanding, and trust among all segments of society. The committee expressed particular concern over present textbooks and resolved that school administrators and boards of education everywhere should take positive steps to find and use instructional materials which treat all social groups fairly and adequately.[9]

Lee J. Cronbach's study, *Text Materials in Modern Education*, concluded that there is a dearth of empirical evidence accurately describing what is wrong with present-day textbooks. He urged that further research and evaluation be conducted on instructional materials.[10]

In 1930, Bessie Louise Pierce provided one of the most comprehensive textbook studies prior to World War II. In her analysis of 400 general textbooks, she concluded that these texts usually were negatively biased in their treatment of Negroes, the "new immigrant," American Indians, and Spaniards, while settlers of Anglo-Saxon ancestry generally were treated favorably. Americans were depicted as being superior to other peoples and the United States as being infallible and benevolent to other countries.[11]

The Committee on the Study of Teaching Materials in Inter-group Relations for the American Council on Education reported in 1949 the results of its analysis of 266 general textbooks used in elementary and secondary schools. The Council's summary indicated that, although the texts were free from intentional bias toward a particular group, there were frequent value judgments and generalizations which appeared to perpetuate antagonisms toward various ethnic and minority groups. The Committee's findings substantiated earlier research in concluding that

the textbooks analyzed (1) generally treated the "new immigrant" in a negative manner, (2) implied a process of "Americanization" in which all immigrants were transformed into exact duplicates of already established Americans leaving all cultural beliefs behind, and (3) perpetuated the stereo-typed image of the Negro, Jew, Indian, and Mexican American.[12]

Morton J. Sobel's study, based on an analysis of fifteen social studies texts used by seventh graders, concluded that racial groups received the same amount of favorable and unfavorable space. The lower class received more attention, but this was usually less favorable than that received by the middle or upper class. He reported that, although author bias was evident in many instances, the texts were much improved in their treatment of human relations.[13]

In the past two decades, the question of textbook bias has been directed largely toward the treatment of ethnic and minority groups. In 1954, Marilyn Collier, in a content analysis of twenty-five readers used for primary grades, found that only one socio-economic class was represented and that only few stories contained Negro characters.[14] John P. Shepard, in 1962, stated that heroes in popular children's fiction tended to be white, Protestant, middle-class people, while villains were non-white and most often of the very poor or of the extremely wealthy class.[15] And in 1970, Ken Durham analyzed the content of forty-two history textbooks used over a period from 1919 to 1970. He concluded that the Negro since 1865 has been virtually ignored in history texts until the last three or four years.[16]

Research conducted by Gaston E. Blom, et. al., was based upon the rationale that the kinds of materials used in introducing children to reading influences their interest in reading and that cultural attitudes are conveyed through the content of stories. In their conclusions, activities depicted in the readers analyzed were described as neutral and redundant. Families were always happy and ambiguous as to sex roles, and settings were invariably depicted in the suburbs, usually in or around the home.[17]

The possible damaging effects of such unrealistic portrayals of family living in elementary textbooks were discussed by Bruno Bettelheim in 1962. He notes that parents always play a vital role in children's literature and that they are never depicted as having the slightest disagreement or difference. He believes that either children mistrust the stories or feel that something is wrong with their family because their parents argue occasionally. The texts always depict the mother as non-working, never preoccupied with house work, and never too busy to cater to the child's demands. The father is never angry or tired and has time to play with the children or take them wherever they wish to go. The elementary student's conclusion, Bettelheim feels, is that his own parents are not good ones because they do not behave as the ones in the stories do. In this psycho-

analytically oriented discussion, he points out that, by trying to make learning easy, pleasant, and amusing, often unrealistic images of life and people are created and presented to children who are too young to distinguish the difference.[18]

Otto Klineburg, in 1965, supported the argument that elementary textbooks contain unrealistic portrayals of American families. He concluded that characters in children's textbooks are generally upper-middle class people who have a comfortable life. These characters also are usually white, and the lower classes rarely are presented.[19]

In 1944, The Committee on the Study of Teaching Materials on Inter-American Subjects for the American Council on Education studied a wide range of instructional materials including 800 general textbooks, motion pictures, and library materials. The Committee reported that there was (1) no conscious antagonism to Latin America in the materials, (2) quantitatively, adequate mention of Latin America, (3) perpetuation of the idea in discussing the colonial period of the Americas that the Spanish are always cruel and greedy, (4) condescending attitude on the part of North Americans toward South Americans, and (5) failure on the part of the teaching materials to bring out the fact that both Americas are an integral part of the Atlantic World with similar European roots. It was stated, however, that these short-comings should not be overemphasized since the materials studied in 1944 seemed vastly superior to those used a quarter of a century before in their treatment of Latin America.[20]

Donald R. Taft has expressed the opinion that

> Textbook writers will write the book that publishers will accept; publishers will accept the books that school boards will adopt; school boards will adopt the books that organized public opinion will demand. But, public opinion itself is determined in part by the content of the texts used in the public schools.[21]

As a part of the procedure for determining whether there was quantitative bias, the following hypotheses were formulated:

1. Certain elementary text materials are quantitatively biased against technical-vocational work modes.

2. The bias stated in 1 above extends through grade levels and to publishers.

To test for qualitative bias, the following hypotheses were formulated:

3. Certain elementary text materials are generally treated less favorably than professional and paraprofessional work modes.

4. Certain elementary text materials generally treat technical-vocational, unskilled work modes more unrealistically than professional and paraprofessional work modes.

5. Certain elementary text materials generally feature as the primary story element technical-vocational, unskilled work modes less frequently than paraprofessional and professional work modes.

6. These negative, unrealistic, and tertiary roles assigned to technical-vocational work modes extend to publishers and grade levels.

Because the criteria for making judgments relating to qualitative bias – quality, realism, narrative emphasis – were highly subjective, it was necessary to develop a technique for validating the evaluative criteria.

First, all evaluations and classifications were completed by the authors according to the criteria described above. Second, a random sample of 100 references was drawn and submitted for independent evaluation by two graduate students in manpower economics at North Texas State University. These two judges were selected on the basis of interest in the subject as well as academic credentials relating to the social sciences. Both independently evaluated and classified each reference according to the stated criteria. Third, a chi-square analysis was employed to test for significant differences between the graduate students' evaluations and the principal researcher's original evaluation. No significant difference was found between the two. Finally, a random sample of fifty references was submitted independently to two professionals in the field of manpower economics and career education.* These two individuals made independent classifications of the work modes submitted, again in terms of the stated criteria. No significant difference was found between their evaluations and the original evaluation produced by the principal researchers.

In summary, this study indicated that quantitative and qualitative bias in favor of professional work modes does exist in elementary reading textbooks. Jobs occupying positions of less status, i.e., technical-vocational and unskilled are mentioned (1) less frequently, (2) less realistically, (3) less positively, (4) and less emphatically than professional, paraprofessional work modes. When the comparisons were made by publisher and grade level, it was discovered that the same kind of bias existed in some grade levels and with some publishers. Consequently, all hypotheses were accepted.

These findings have far-reaching implications. Students are in constant contact with textbooks and, through these materials, are being subtly and insidiously bombarded by implicit values that eulogize professional and paraprofessional work activities and derogate technical-vocational work activities. The existence of this bias is sufficient justifica-

*These two independent professionals were Lewis Abernathy, Professor of Economics and Director of the Manpower and Industrial Relations Institute at North Texas State University and Alton D. Ice, Executive Director of the Advisory Council for Technical-Vocational Education in Texas.

tion for further research and evaluation. It is possible, though not a valid inference from this study, that a more unbiased presentation of work modes and school textbooks could result in more positive attitudes and accurate perceptions of work modes on the part of students. In a society facing an increasing need for technical-vocational workers, this line of research takes on real significance.

These findings further imply that textbook publishers must pay more careful attention to the impact of their texts on the problem of career education. It is important that they realize what subtle influences they might be having on pupils and what the long-run result might be.

The study has a major, obvious limitation. Because it has been demonstrated that bias exists in texts, it cannot be directly concluded that this bias results in corresponding attitudinal differences in students. This arena obviously is a topic for a badly needed follow-up study.

Perhaps one last critical speculative implication is appropriate. From the data, it is possible to infer that work mode bias in textbooks reflects a deep and pervasive general cultural bias against technical-vocational-unskilled work modes, and this general bias strongly inhibits rational reconstruction of curricular patterns.

FOOTNOTES

[1]Albert Alexander, "Does the American History Textbook Wear A Gray Flannel Cover?" *Social Education*, XXXIII (March, 1969), 300-305, 324.

[2]Sidney P. Marland, Jr., "Career Education Now," speech delivered before the convention of the National Association of Secondary Principals, (Houston, Texas, January 23, 1971.)

[3]Sidney P. Marland, Jr., "Marland on Career Education," *American Education*, VII (November, 1971), p. 28.

[4]Larry J. Bailey, ed., *Facilitating Career Development: An Annotated Bibliography* (Springfield, Illinois, 1970).

[5]Herbert S. Parnes, *Career Thresholds*, Vol. I (Columbus, Ohio, 1969), p.2.

[6]*Wall Street Journal*, January 21, 1972.

[7]*Wall Street Journal*, February 8, 1972.

[8]Richard B. Freeman, *The Market for College Trained Manpower* (Cambridge, Mass., 1971).

[9]Marland, pp. 4-8.

[10]Lee J. Cronbach, *Text Materials in Modern Education* (Urbana, Illinois, 1955).

[11]Bessie Louise Pierce, *Civic Attitudes in American History Textbooks* (Chicago, 1930)

[7]*Intergroup Relations in Teaching Materials* (Washington, D. C., 1949).

[8]Morton J. Sobel, "An Analysis of Social Studies Textbooks in Regard to Their Treatment of Four Areas of Human Relations." (unpublished Ed.D. dissertation, Wayne State University, 1954).

[9]Marilyn Collier, "An Evaluation of Multi-Ethnic Basal Readers," *Elementary English*, LXIV (February, 1967), 152-157.

[10]John P. Shepard, "The Treatment of Characters in Popular Children's Fiction," *Elementary English*, XXXIX (March, 1962), 202-209.

[11]Ken Durham, "A Survey of High School American History Textbooks Used in Texas Between 1919-1970," (unpublished doctoral dissertation, North Texas State University, 1971).

[12]Gaston E. Blom, "Ethnic Integration and Urbanization of a First Grade Textbook," *Psychology in the Schools*, IV (April, 1967), 176-181.

[13]Bruno Bettleheim, "The Decision to Fail," *School Review*, LXIX (Winter, 1961), 377-412.

[14]Otto Klineburg, "Life is Fun in a Fair-Skinned World," *Saturday Review*, September 1963, pp. 75-77, 87.

[15]*Latin America in School and College Teaching Materials* (Washington, D. C., 1944).

[16]Donald R. Taft, "History Textbooks and Truth," *Proceedings of the Association of History Teachers of the Middle States and Maryland* (1926), p. 33.

APPENDIX I

METHODOLOGY—Procedure for Collecting Data

The population frame for this study was *Texas Education Agency Bulletin No. 699* which listed the state elementary reading textbooks adopted for 1970-71. All 105 readers on the list (K-6), basal and supplementary, were included in the analysis.

Each textbook was analyzed in terms of (1) quantitative bias—frequency of reference made to each work mode—and (2) qualitative bias—a contextual evaluation of each reference to a work mode in terms of positive, negative, or neutral treatment of primary, secondary, or tertiary narrative roles and realistic-unrealistic portrayal in the narrative. These analytical elements were defined by the following criteria:

I. Job Classification: To classify a job as professional, technical-vocational, or semi-skilled, the Hollingshead "Two Factor Index of Social Position" was employed.*

II. Positive-negative reference: The classification of a reference as positive-negative was based on the following criteria:

A. Apparent Standard of Living
   1. Working environment (clean, neat, orderly, chaotic, etc.)
   2. Level of education
   3. Condition of home
   4. Living conditions in home
   5. Automobile
   6. Neighborhood
   7. Opportunity for leisure time or recreation

B. Personal Demeanor
   1. Mode of dress
   2. Speech pattern
   3. Grooming
   4. General temperament or apparent attitudes

C. Overt Comments
   1. Any remark in the narrative that refers to an occupation as being a "good job" or implies a favorable comment toward a specific work mode or person depicted in that occupation

*Classes 1,2, and 3 of the Hollingshead index were combined to form occupational category 1, professional. Classes 4 and 5 of the index were combined to form category 2, technical-vocational. Classes 6 and 7 were combined to form category 3, semi-skilled and unskilled. A high degree of objectivity was possible given the long list of operationally viable work modes used in the Hollingshead index. From this list, each reference to the work mode in a text was located on the Hollingshead scale and recorded according to the corresponding occupational category.

2. The degree to which the subject in the reference is addressed favorably—for example, as sir, Mr., Dr., or any other title which indicates favorable treatment

By utilizing these criteria, each reference in the 105 text materials was classified as laudatory (positive) or non-laudatory (negative) with non-laudatory as negative or neutral.

III. Realism: Each work mode was judged to be treated in either a realistic or unrealistic manner. A reference was judged to be "real" if it depicted the occupation in terms of the tasks that are actually involved in carrying out the duties of the job. If the job reference were portrayed in terms of tasks that were essentially unrelated to the activity, it was judged to be "unrealistic."

IV. Emphasis. Each job reference was judged in terms of its narrative importance. The narrative's importance was ranked as primary, secondary, or tertiary using the following criteria:

A. Primary: To be ranked in this classification, the work mode had to occupy the major theme in each story or had to be the overt or obvious occupation of the principal character in the story.

B. Secondary: To be placed in this category, the work reference did not occupy the central theme; yet it received sufficient emphasis to describe that occupation and be discernible as having a definite role in the story.

C. Tertiary: To be placed in this classification, the reference was mentioned only in passing and did not have a role in the narrative sufficient to describe the occupation mentioned.

APPENDIX II

INSTRUMENTS AND PROCEDURES FOR ANALYSIS

The basic instrument employed in the study was the Hollingshead "Two Factor Index of Social Position." This instrument employs seven different groupings of occupations in a continuum of low-to-high status. These seven categories were combined under three broader headings in order to fulfill the needs of the study. This scale employs the same occupational divisions as those used by the Bureau of Labor Statistics. It was chosen over the BLS material because of its more comprehensive listing of various job modes.

The analytical methodologies employed in this study were chi-square, goodness of fit, and contingency analyses.

Model: If Θij is the probability that an observation belongs to the ith

run and the *j*th column of a contingency table, it is assumed that this probability remains constant from trial to trial and that the trials are, furthermore, independent. Also it was assumed that the statistic, chi-square, is distributed approximately chi-square with (a-1) (b-1) degrees of freedom.

Tables 1-19 which follow are goodness-of-fit tests for quantitative bias. These analyses were made using all references, references by publisher, and references divided by grade level. The frequency-of-job reference found in elementary reading textbooks was compared with Bureau of Labor statistics for actual frequency-of-job occurence in the economy. Textbook references were compared with Bureau of Labor figures for the present national, future national, present state, and future state job markets. When all references were considered, without using publisher or grade level breakdown, it was found that there were more frequent references to professional work modes and less frequent reference to technical-vocational, unskilled work modes than would be the case if no bias existed. These differences were significant in every case at the .001 level. (See table 1.) Throughout the total range of current state and national labor markets and projected state and national labor markets, there are more frequent references (173) to professional work modes than would be expected had no bias existed. There were 179 references to technical-vocational work modes—much fewer than would have been expected had no bias existed.

When considered by publishers, tables 2 through 12 show publishers 1, 5, 6, 9, 12, and 14 with significant bias at the .05 level. Publishers 4, 7, 8, 13, and 15 do not show quantitative bias at the .05 level for either current or projected labor markets.

Tables 13-19 break the data down by grade levels. Significant bias exists at grade levels 1,3, 4, 5, and 6. Significant quantitative bias did not exist at grade levels 0 and 2.

Tables 20-27 are contingency analyses of the relationship between job categories and the evaluative treatment (positive, negative) received in the narrative. The tables show these comparisons on the basis of all references, references grouped by publisher, and references grouped by grade level. Table 20 shows the relationship without reference to publisher or grade level and indicates that professional work modes are consistently portrayed in a more positive manner than technical-vocational and unskilled work modes. The relationships were significant at the .001 level. When the job categories were considered by publishers, publishers 1, 6, and 14 were found to be significantly biased in favor of professional work modes and against technical-vocational, unskilled work modes. (See tables 21-29.) The relationships were significant at the .05 level. When the

job categories are considered by grade level, significant bias was found at grades 0, 2, and 4. (See tables 31-37.) The relationships in these cases were significant at the .05 level.

Tables 38-55 show the relationship between job categories and their contextual emphases. These contingency analyses were made for all references, for publishers, and by grade levels. Table 38, a contingency analysis of all references without categorization by grade level or publisher, indicates that professional work modes received primary emphasis twice as often as technical-vocational jobs and three times as often as semi-skilled jobs. These relationships were significant at the .01 level. When the job categories were analyzed by publishers as in tables 39-48, publishers 1, 6, 13, and 14 were found to be biased in favor of professional work modes. These relationships were significant at the .01 level. But when the job categories were considered by grade level, no significant bias at the .05 level was found. Using a .1 level of significance, some bias in favor of professional work modes was found in grades 1 and 2. (See tables 49-55.)

Tables 56-74 are contingency analyses of the relationship between the three job categories and the realism of narrative and pictorial portrayal of work modes. Table 56, which analyzes the relationship between work modes and realism without reference to grade level or publisher, indicates that professional work modes are treated much more realistically than technical-vocational and unskilled work modes. The contingency relationship was significant at the .01 level. When the work modes were analyzed by publisher as in tables 57-67, only two publishers (5 and 6) were significantly biased in terms of the realism of treatment of professional work modes against technical-vocational work modes. The relationship for publishers 5 and 6 was significant at the .01 level.

Tables 68-74 are analyses of relationships between work modes and realistic treatment by grade levels. Grades 0, 1, and 2 showed significant relationships between job category and realism again in favor of professional work modes. The relationships were significant at the .05 level.

TABLE 1
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	173	107	118	106	110
Technical-vocational	179	245	241	234	235
Unskilled	98	98	91	110	105

X^2 = (current national) = 58.14780; P=0.0000
X^2 = (1980 national) = 41.84995; P=0.0000
X^2 = (current Texas) = 55.89328; P=0.0000
X^2 = (1980 Texas proj) = 50.02617; P=0.0000

TABLE 2
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	25	17	19	25	17
Technical-vocational	28	39	38	28	38
Unskilled	19	16	15	19	17

X^2 (current national) = 7.54224 P=0.0234
X^2 (1980 national) = 6.17397 P=0.0461
X^2 (current Texas) = 6.25314 P=0.0443
X^2 (1980 Texas Proj.)= 5.89946 P=0.0528

TABLE 3
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	4	4	4	4	4
Technical-vocational	6	9	9	8	8
Unskilled	6	3	3	4	4

X^2 (current national) = 2.69800 P=0.2595
X^2 (1980 national) = 3.10615 P=0.2119
X^2 (current Texas) = 1.78553 P=0.4098
X^2 (1980 Texas) = 2.05712 P=0.3576

TABLE 4
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	8	4	4	4	4
Technical-vocational	6	9	9	8	8
Unskilled	2	3	3	4	4

X^2 (current national) = 6.08724 P=0.0481
X^2 (1980 national) = 4.70431 P=0.0957
X^2 (current Texas) = 6.30067 P=0.0433
X^2 (1980 Texas) = 5.76851 P=0.0564

TABLE 5
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	36	18	20	18	18
Technical-vocational	29	42	41	39	40
Unskilled	11	16	15	19	18

X^2 (current national) = 23.35674 P=0.0000
X^2 (1980 national) = 17.66583 P=0.0002
X^2 (current Texas) = 24.13940 P=0.0000
X^2 (1980 Texas) = 21.94975 P=0.0000

TABLE 6
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	1	2	2	2	1
Technical-vocational	5	5	5	5	5
Unskilled	3	2	2	2	3

X^2 (current national) = 1.17000 P=0.5573
X^2 (1980 national) = 1.53920 P=0.4733
X^2 (current Texas) = 0.91046 P=0.6344
X^2 (1980 Texas) = 1.05747 P=0.5895

TABLE 7
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	6	4	5	4	4
Technical-vocational	5	10	9	9	10
Unskilled	7	4	4	5	4

X^2 (current national) = 5.49104 P=0.0647
X^2 (1980 national) = 5.63617 P=0.0602
X^2 (current Texas) = 4.29588 P=0.1173
X^2 (1980 Texas) = 4.53024 P=0.1044

TABLE 8
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	27	18	19	18	18
Technical-vocational	40	40	40	38	39
Unskilled	7	16	15	18	17

X^2 (current national) = 10.17628 P=0.0063
X^2 (1980 national) = 7.33243 P=0.0259
X^2 (current Texas) = 12.10447 P=0.0024
X^2 (1980 Texas) = 10.62244 P=0.0051

TABLE 9
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	13	8	8	7	8
Technical-vocational	11	17	17	17	17
Unskilled	8	7	7	8	7

X^2 (current national) = 6.32757 P=0.0427
X^2 (1980 national) = 5.06289 P=0.0801
X^2 (current Texas) = 5.82958 P=0.0547
X^2 (1980 Texas) = 5.44196 P=0.0663

TABLE 10
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	19	15	16	14	19
Technical-vocational	26	33	32	32	26
Unskilled	16	13	13	15	16

X^2 (current national) = 3.55773 P=0.1692
X^2 (1980 national) = 2.98273 P=0.2254
X^2 (current Texas) = 2.61047 P=0.2713
X^2 (1980 Texas) = 2.47358 P=0.2905

TABLE 11
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	29	14	15	14	14
Technical-vocational	18	32	32	31	31
Unskilled	12	13	12	14	14

X^2 (current national) = 22.28235 P=0.0000
X^2 (1980 national) = 17.74640 P=0.0002
X^2 (current Texas) = 22.03522 P=0.0000
X^2 (1980 Texas) = 20.46094 P=0.0000

TABLE 12
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	4	4	4	4	4
Technical-vocational	5	8	8	8	8
Unskilled	6	3	3	3	3

X^2 (current national) = 3.60491 P=0.1653
X^2 (1980 national) = 4.01314 P=0.1350
X^2 (current Texas) = 2.56587 P=0.2774
X^2 (1980 Texas) = 2.86333 P=0.2391

TABLE 13
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	17	24	26	24	24
Technical-vocational	59	54	54	52	52
Unskilled	24	22	20	24	24

X^2 (current national) = 2.55819 P=0.2784
X^2 (1980 national) = 4.47033 P=0.1075
X^2 (current Texas) = 2.79461 P=0.2475
X^2 (1980 Texas) = 3.12361 P=0.2100

TABLE 14
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	14	8	9	8	8
Technical-vocational	12	18	18	17	17
Unskilled	7	17	6	8	8

X^2 (current national) = 6.78422 P=0.0340
X^2 (1980 national) = 5.12236 P=0.0777
X^2 (current Texas) = 6.62505 P=0.0368
X^2 (1980 Texas) = 6.03959 P=0.0492

TABLE 15
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	28	21	24	21	22
Technical-vocational	38	49	48	47	47
Unskilled	24	20	18	22	21

X^2 (current national) = 5.55041 P=0.0628
X^2 (1980 national) = 4.78880 P=0.0917
X^2 (current Texas) = 4.00249 P=0.1357
X^2 (1980 Texas) = 3.85772 P=0.1458

TABLE 16
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	32	16	32	16	16
Technical-vocational	21	36	21	34	35
Unskilled	13	14	13	16	15

X^2 (current national) = 23.28033 P=0.0000
X^2 (1980 national) = 18.34804 P=0.0001
X^2 (current Texas) = 23.11571 P=0.0000
X^2 (1980 Texas) = 21.38091 P=0.0000

TABLE 17
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	27	13	15	13	14
Technical-vocational	17	31	30	29	29
Unskilled	12	12	11	14	13

X^2 (current national) = 19.97870 P=0.0001
X^2 (1980 national) = 15.96383 P=0.0004
X^2 (current Texas) = 19.59073 P=0.0001
X^2 (1980 Texas) = 18.22237 P=0.0001

TABLE 18
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	25	13	14	12	13
Technical-vocational	20	29	28	28	28
Unskilled	8	11	11	13	12

X^2 (current national) = 16.00217 P=0.0004
X^2 (1980 national) = 12.10000 P=0.0024
X^2 (current Texas) = 16.47087 P=0.0003
X^2 (1980 Texas) = 14.98119 P=0.0006

TABLE 19
Goodness of Fit

Work Modes	Actual Observed Frequency of Reference	Expected Frequency for Current National Labor Market	Expected Frequency for 1980 National Labor Market	Expected Frequency for Current Texas Labor Market	Expected Frequency for 1980 Texas Labor Market
Professional	30	12	13	12	13
Technical-vocational	12	28	27	27	27
Unskilled	10	12	12	13	12

X^2 (current national) = 34.66579 P=0.0000
X^2 (1980 national) = 28.70689 P=0.0000
X^2 (current Texas) = 34.54948 P=0.0000
X^2 (1980 Texas) = 32.48465 P=0.0000

TABLE 20
Contingency Table

Total

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	132	119	41	54
Technical-vocational	125	123	54	56
Unskilled	53	68	45	30

$X^2 = 14.53417$

$P = 0.001$

TABLE 21
Contingency Table

Total Publisher No. 1

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	20	17	5	8
Technical-vocational	23	20	5	8
Unskilled	7	13	12	6

$X^2 = 12.95803$

$P = 0.002$

TABLE 22
Contingency Table

Total Publisher No. 4

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	3	3	1	1
Technical-vocational	5	4	1	1
Unskilled	4	5	2	2

$X^2 = 0.44444$

$P = 0.8034$

TABLE 23
Contingency Table

Total Publisher No. 6

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	28	23	8	13
Technical-vocational	19	19	10	10
Unskilled	2	7	9	4

$X^2 = 13.08696$

$P = 0.001$

TABLE 24
Contingency Table

Total Publisher No. 7

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	1	1	0	0
Technical-vocational	4	4	1	1
Unskilled	3	3	0	0

$X^2 = 0.9000$

$P = 0.6438$

TABLE 25
Contingency Table

Total Publisher No. 8

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	5	4	1	2
Technical-vocational	3	3	2	2
Unskilled	4	5	3	2

$X^2 = 1.13571$

$P = 0.5724$

TABLE 26
Contingency Table

Total Publisher No. 9

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	11	10	16	17
Technical-vocational	13	15	27	25
Unskilled	4	3	3	4

$X^2 = 1.69042$
$P = 0.5669$

TABLE 27
Contingency Table

Total Publisher No. 12

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	12	10	1	3
Technical-vocational	8	8	3	3
Unskilled	4	6	4	2

$X^2 = 4.77389$

$P = 0.0903$

TABLE 28
Contingency Table

Total Publisher No. 13

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	14	15	5	4
Technical-vocational	23	21	3	5
Unskilled	12	13	4	3

$X^2 = 1.90662$

$P = 0.6122$

TABLE 29
Contingency Table

Total Publisher No. 14

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	28	25	1	4
Technical-vocational	17	16	1	2
Unskilled	6	10	6	2

$X^2 = 17.10887$

$P = 0.0004$

TABLE 30
Contingency Table

Total Publisher No. 15

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	2	3	2	1
Technical-vocational	4	3	1	2
Unskilled	4	4	2	2

$X^2 = 0.9000$

$P = 0.6438$

TABLE 31
Contingency Table

Total Grade Level 0

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	1	6	16	11
Technical-vocational	26	19	33	40
Unskilled	5	7	18	16

$X^2 = 10.33116$

$P = 0.0059$

TABLE 32
Contingency Table

Total Grade Level 1

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	13	11	1	3
Technical-vocational	9	10	3	2
Unskilled	5	6	2	1

$X^2 = 2.02976$

$P = 0.3625$

TABLE 33
Contingency Table

Total Grade Level 2

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	28	23	0	5
Technical-vocational	31	31	7	7
Unskilled	15	20	9	4

$X^2 = 12.45120$

$P = 0.0021$

TABLE 34
Contingency Table

Total Grade Level 3

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	23	24	9	8
Technical-vocational	17	16	4	5
Unskilled	10	10	3	3

$X^2 = 0.58084$

$P = 0.7480$

TABLE 35
Contingency Table

Total Grade Level 4

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	23	21	4	6
Technical-vocational	14	13	3	4
Unskilled	6	9	6	3

$X^2 = 6.19428$

$P = 0.0456$

TABLE 36
Contingency Table

Total Grade Level 5

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	21	20	4	5
Technical-vocational	17	16	3	4
Unskilled	5	7	3	1

$X^2 = 2.14403$
$P = 0.3424$

TABLE 37

Contingency Table

Total Grade Level 6

Work Mode	POSITIVE		NON-POSITIVE	
	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists	Observed Frequency of Reference	Hypothesized Frequency of References If No Bias Exists
Professional	23	22	7	8
Technical-vocational	1	2	1	1
Unskilled	7	7	3	2

$X^2 = 0.78827$

$P = 0.6744$

TABLE 38
Contingency Table

Total

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	45	29	96	95	18	35
Technical-vocational	20	29	99	93	37	34
Unskilled	11	17	48	56	35	21

$X^2 = 33.18695$

$P = 0.0000$

TABLE 39
Contingency Table

Total Publisher No. 1

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	7	5	18	14	0	6
Technical-vocational	6	6	16	16	6	6
Unskilled	3	4	6	11	10	4

$X^2 = 17.40286$

$P = 0.0017$

TABLE 40
Contingency Table

Total Publisher No. 4

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	2	1	1	2	1	1
Technical-vocational	0	1	4	3	2	2
Unskilled	1	1	3	3	2	2

$X^2 = 4.12222$
$P = 0.3900$

TABLE 41
Contingency Table

Total Publisher No. 5

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	0	1	7	6	1	1
Technical-vocational	1	0	4	5	1	1
Unskilled	0	0	2	2	0	0

$X^2 = 2.28205$
$P = 0.6840$

TABLE 42
Contingency Table

Total Publisher No. 6

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	14	9	16	15	4	10
Technical-vocational	4	7	12	11	9	7
Unskilled	0	2	3	4	6	3

$X^2 = 15.13586$

$P = 0.0046$

TABLE 43
Contingency Table

Total Publisher No. 8

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	2	2	4	3	0	1
Technical-vocational	2	1	2	3	1	1
Unskilled	1	2	3	4	3	1

$X^2 = 3.98476$

$P = 0.4085$

TABLE 44
Contingency Table

Total Publisher No. 9

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	2	1	10	9	3	5
Technical-vocational	2	2	11	13	9	7
Unskilled	0	0	5	4	1	2

$X^2 = 3.54825$
$P = 0.0046$

TABLE 45
Contingency Table

Total Publisher No. 12

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	6	4	5	7	2	2
Technical-vocational	3	4	7	5	1	2
Unskilled	2	3	4	4	2	1

$X^2 = 2.39695$

$P = 0.6632$

TABLE 46
Contingency Table

Total Publisher No. 13

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	1	4	17	12	1	3
Technical-vocational	1	5	19	17	6	4
Unskilled	11	4	3	10	2	2

$X^2 = 32.73637$

$P = 0.0000$

TABLE 47
Contingency Table

Total Publisher No. 14

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	10	6	14	15	5	8
Technical-vocational	2	4	13	10	3	4
Unskilled	0	2	4	6	7	3

$X^2 = 15.16452$

$P = 0.0046$

TABLE 48
Contingency Table

Total Publisher No. 15

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	1	0	2	3	1	1
Technical-vocational	0	0	5	4	0	1
Unskilled	0	0	5	5	1	1

$X^2 = 4.58333$
$P = 0.3332$

TABLE 49
Contingency Table

Total Grade Level 0

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	0	0	2	2	1	1
Technical-vocational	2	1	19	18	15	17
Unskilled	0	0	8	10	12	10

$X^2 = 2.94555$

$P = 0.5671$

TABLE 50
Contingency Table

Total Grade Level 1

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	4	2	9	8	1	4
Technical-vocational	1	2	7	7	4	3
Unskilled	0	1	3	4	4	2

$X^2 = 7.99866$
$P = 0.0925$

TABLE 51
Contingency Table

Total Grade Level No. 2

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	10	6	14	16	4	6
Technical-vocational	6	8	25	21	7	9
Unskilled	4	5	11	13	9	6

$X^2 = 8.17641$

$P = 0.0862$

TABLE 52
Contingency Table

Total Grade Level 3

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	9	7	18	17	5	8
Technical-vocational	3	5	12	11	6	5
Unskilled	3	3	4	7	6	3

$X^2 = 5.86352$

$P = 0.2105$

TABLE 53
Contingency Table

Total Grade Level 4

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	3	2	22	22	2	3
Technical-vocational	1	1	14	14	2	2
Unskilled	1	1	9	10	2	1

$X^2 = 1.07093$

$P = 0.8988$

TABLE 54
Contingency Table

Total Grade Level 5

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	6	4	16	17	3	4
Technical-vocational	4	4	12	13	4	3
Unskilled	0	2	7	5	1	1

$X^2 = 3.06927$

$P = 0.5465$

TABLE 55
Contingency Table

Total Grade Level 6

Work Mode	PRIMARY		SECONDARY		TERTIARY	
	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference	Observed Frequency of Reference	Hypothetized Frequency of Reference
Professional	13	11	15	17	2	2
Technical-vocational	3	5	9	7	0	1
Unskilled	3	4	6	6	1	1

$X^2 = 2.91777$

$P = 0.5718$

Total

TABLE 56
Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	132	124	25	33
Technical-vocational	117	130	47	34
Unskilled	79	74	14	19

$X^2 = 10.28811$

$P = 0.0063$

TABLE 57

Total Publisher No. 1 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	19	19	6	6
Technical-vocational	18	21	10	7
Unskilled	17	14	2	5

$X^2 = 3.85042$

$P = 0.1463$

TABLE 58
Total Publisher No. 4 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	4	4	0	0
Technical-vocational	5	5	1	1
Unskilled	6	6	0	0

$X^2 = 1.77778$
$P = 0.4114$

TABLE 59

Total Publisher No. 5 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	8	5	0	3
Technical-vocational	1	4	5	2
Unskilled	1	1	1	0

$X^2 = 10.31111$

$P = 0.0059$

TABLE 60
Total Publisher No. 6 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	30	25	3	8
Technical-vocational	14	20	12	6
Unskilled	8	7	1	2

$X^2 = 11.99123$
$P = 0.0026$

TABLE 61
Contingency Table

Total Publisher No. 7

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	1	1	0	0
Technical-vocational	4	3	1	1
Unskilled	1	2	2	1

$X^2 = 2.40000$
$P = 0.3012$

TABLE 62

Total Publisher No. 8 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	5	4	1	1
Technical-vocational	4	4	1	1
Unskilled	5	6	2	2

$X^2 = 0.28469$

$P = 0.8674$

TABLE 63

Total Publisher No. 9 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	11	10	3	4
Technical-vocational	19	19	9	8
Unskilled	4	5	2	2

$X^2 = 0.57623$

$P = 0.7498$

TABLE 64

Total Publisher No. 12 **Contingency Table**

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	11	11	2	2
Technical-vocational	10	9	1	2
Unskilled	5	6	2	1

$X^2 = 1.20922$

$P = 0.5465$

TABLE 65

Total Publisher No. 13 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	16	17	3	2
Technical-vocational	23	23	3	3
Unskilled	15	14	1	2

$X^2 = 0.77825$

$P = 0.6777$

TABLE 66

Total Publisher No. 14 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	23	24	6	5
Technical-vocational	14	15	4	3
Unskilled	11	9	0	2

$X^2 = 2.84629$

$P = 0.2411$

TABLE 67

Total Publisher No. 15 **Contingency Table**

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	3	4	1	0
Technical-vocational	5	4	0	1
Unskilled	5	5	1	1

$X^2 = 1.29807$

$P = 0.5228$

TABLE 68
Total Grade Level 0 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	1	1	1	1
Technical-vocational	26	30	18	14
Unskilled	18	14	2	6

$X^2 = 6.36952$
$P = 0.0418$

TABLE 69
Contingency Table

Total Grade Level 1

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	11	9	3	5
Technical-vocational	9	7	3	5
Unskilled	0	4	7	3

$X^2 = 13.70316$
$P = 0.0011$

TABLE 70

Total Grade Level 2 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	27	24	1	4
Technical-vocational	28	32	10	6
Unskilled	22	21	2	3

$X^2 = 7.73733$

$P = 0.0212$

TABLE 71

Contingency Table

Total Grade Level 3

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	27	28	5	4
Technical-vocational	20	19	1	2
Unskilled	11	11	2	1

$X^2 = 1.56651$

$P = 0.4572$

TABLE 72

Total Grade Level 1 Contingency Table

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	25	22	2	6
Technical-vocational	12	13	5	3
Unskilled	7	9	4	2

$X^2 = 5.45801$

$P = 0.0658$

TABLE 73
Contingency Table

Total Grade Level 5

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	19	17	5	7
Technical-vocational	13	15	7	5
Unskilled	6	6	2	2

$X^2 = 1.13058$

$P = 0.5684$

TABLE 74
Contingency Table

Total Grade Level 6

Work Mode	REAL		UNREAL	
	Observed Frequency of Reference	Hypothesized Frequency of Reference	Observed Frequency of Reference	Hypothesized Frequency of Reference
Professional	26	25	4	5
Technical-vocational	9	10	3	2
Unskilled	8	8	2	2

$X^2 = 0.87787$
$P = 0.6448$

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